let us say, oak or birch in June cannot expect to pass through this life without ingesting a certain amount of honey-dew.

So I put forward for your consideration the suggestion that the reason why my friend's *solidaginis* contracted, and died from, diarrhoea may have been something quite different from honey-dew.

But I wish I knew why my *Leporina* died.

LUDIUS FERRUGINEUS, L., AB. OCCITANICUS, VILLERS (COL. ELATERIDAE), AN ABERRATION NEW TO THE BRITISH LIST.

By Horace Donisthorpe, F.Z.S., F.R.E.S., etc.

Towards the end of June 1945, a certain number of perfect insects of *Ludius ferrugineus*, L., was reared from larvae taken in felled elms in Windsor Forest in 1943 and 1944. One of these possesses an entirely black thorax and is, in fact, the fine aberration *occitanicus*, Villers. This form, which is very rare on the Continent, has not occurred in Britain before. My friend, Mr A. A. Allen, writes to tell me that he has also reared *occitanicus* this year, from a larva from the same source as mine. We therefore share the credit for adding this nice ab. to our list.

It may be remembered that at a meeting of the R. Ent. Soc. of London on 5th October 1927, I read a paper on the Bionomics of *Ludius ferrugineus*, L. The late Miss F. J. Kirk and I discovered the larvae in Windsor Forest in 1926. In 1927 and subsequent years we reared and distributed over 50 perfect insects. At that time *L. ferrugineus* had not been found in Britain for nearly 100 years.

I may mention that last year I also reared a certain number of specimens from 1943 larvae.

A STUDY ON THE EXCAVATION OF MOUNDS BY THE ANT PHEIDOLE PALLIDULA, NYL. (HYM. FORMICIDAE) ON A SMALL AREA OF GROUND.

By W. Pickles, F.R.E.S.

In continuation of studies on the excavation of soil by ants (see Pickles 1941-43) a small piece of ground of 143 square feet in area and measuring 13 ft. by 11 ft. was investigated, when it was discovered that there were a large number of mounds of excavated material there from the mouths of the nests of the ant *Pheidole pallidula*, Nyl. It is not claimed that each individual mound was a separate nest; but it was obvious that several of these mounds did belong to the same nest system.

Scattered over this small area of ground there were 51 nest openings, each with a circular pile of excavated material around it. These were first noted on 1st April 1945, but they were first counted and investigated on 7th April 1945. At the time of visiting the area on the latter date the ants were busy carrying on the excavations and adding further material to the mounds. The mounds were not uniformly distributed over the area, there being a variation in the number of mounds per

square foot of from nil to four giving an average of 2.8 mounds per sq. ft. Neither was the distribution of the nests regular in that there was a decided concentration towards the southern side of the area. The diameter of the mounds varied considerably from 1 inch to 3½ inches, with an average of 2.11 inches diameter.

Taking the average diameter of a mound as 2.11 ins. then the average area of each mound would be 3.46 sq. ins. and the total area covered by excavated material would be 176.5 sq. ins. which is considerably more than one square foot in area.

At intervals the soil from these mounds was swept up, dried and weighed with the idea of ascertaining the rate at which excavation was proceeding and the total weight of soil brought up. The actual excavating by this species of ant appears to be independent of weather conditions: with some species of ant, e.g. *Tapinoma nigerrimum*, Nyl., and *Messor barbarus barbarus*, L., for instance, building or excavation only takes place after rain or during humid atmospheric conditions.

In Table 1 a record of the excavations is given.

TABLE 1.—EXCAVATION OF SOIL BY THE ANT *PHEIDOLE PALLIDULA*.
(All weights are given in ounces.)

Date.	Total wt. of soil excavated.	Average wt. of soil excavated per nest.	Average wt. of soil excavated per sq. ft.	Average wt. of soil excavated per day.	No of days.
1.iv.45	—	—	—	—	—
8.iv.45	10.7	0.21	0.07	1.53	7
13.iv.45	7.0	0.14	0.05	1.53	5
23.iv.45	10.0	0.19	0.07	1.00	10
3. v.45	13.8	0.27	0.10	1.38	10
19. v.45	2.2	0.04	0.01	0.14	16
27. v.45	—	—	—	—	8
Totals	43.7	0.86	0.31	0.77	56

From the Table it will be seen that in 56 days over which time observations were carried out, 43.7 ozs. of soil were excavated at the average rate of 0.77 ozs. per day and this was laid on the surface at an average weight of 0.31 ozs. per square foot. This weight of soil is more than 2½ lbs. and is a considerable weight over a small area such as this. Imms (1934) quoting Drummond ("Tropical Africa") mentions the effect of termites on the circulation of soil being similar to that of the earthworm; it would appear then that over this short period of time this species of ant is fulfilling its share in the circulation of soil. Throughout the district this ant is common and its circularly excavated mounds are very numerous so that over a large area of ground a considerable amount of soil will be brought from below and exposed to the effects of the elements each year.

I wish to thank Mr H. St J. K. Donisthorpe for kindly identifying the ants for me.

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COLLECTING NOTES.

Pieris brassicae Swarming on the Dorset Coast.—From Saturday, 28th July, to 3rd August this species has been coming to the shore in teeming thousands from here to Weymouth and to Studland in the East, the cliff face, and fields edging the seaboard has been covered with the "White Wings Pest."

They all come from a S.E. direction, some seem very weak, alight on the wet sand and crawl around, while others fly robustly in, settling on the charlock, ragwort and valerian before their journey inland; most are in fresh condition. The majority are ♀♀.

The peak was reached yesterday, 3rd August. I have had a grand stand position here from which to observe them.—Leonard Tatchell, Coast Guard Look Out, Swanage, 4th August 1945.

Colias hyale in Dorset.—On Tuesday last, 31st August, I spent a few hours at Kimmeridge, Dorset, and observed two examples of *C. hyale* in perfect condition. There were also plenty of worn *Vanessa cardui* this past month.—L. Tatchell.

Aberration of Vanessa cardui.—This afternoon, 25th July, by the Dallington New Road, near Battle, Kent, I saw a butterfly which I thought must be a "Painted Lady," yet it did not quite look like one. On looking it up in South's book I find it was like the variety 4 on plt. 49 facing page 83, though not exactly the same. It settled again on the ground near and it was not like the specimens shown on plt. 45 facing page 79. I saw two of them—one was a bright specimen, the other was duller.—(Miss) M. Foote, "Abbey Oak," Battle.

Sympetrum flaveolum, Linn., in Surrey.—Members of the London Natural History Society recently visited Godstone and Esher to study the species of Dragonflies that were about, and on each occasion were fortunate enough to capture a specimen of this migrant, as well as other species of more common occurrence.—H. J. Burkill, 3 Newman's Court, Cornhill, E.C.3.

Abundance of Pieris brassicae.—This species is swarming now (early August) in our garden at Fetcham and there is apparently a big immigration swarm passing across. I have seen a good many *P. napi* among them, but not so many *P. rapae*. They do not seem to be pairing as yet, but mostly sipping at flowers and flying on towards the north-west. *Pararge megera* seems as plentiful, but that species is flitting about and not moving on.—Id., 5.viii.45.